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CLINICAL LECTURE.

DIABETES MELLITUS.*

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GENTLEMEN.—The next patient, a woman, age 52 years; nativity Ireland; occupation housewife, is interesting because from her history almost an absolute diagnosis of her disease can be made.

Family History.—The father died at the age of 57 years; cause of death unknown to her. The mother died at the age of 65 years from cancer of the stomach. She has three brothers and three sisters living, and all of whom are in good health. Three sisters died in infancy. She has no knowledge of her grandparents. One uncle and one aunt on here mother's side, both died of cancer of the stomach. The history is negative as regards tuberculosis.

Previous Personal History.—As a child she had measles and diphtheria. Typhoid fever at the age of 34, and pneumonia at the age of 42 years. Six years ago she had a disease of the gums, and at that time was compelled to have all of her teeth extracted.

Present Illness.—Six years ago soon after her gums were healed she began to feel weak and easily became exhausted on exertion. She at the same time noticed that her thirst became marked, and that she voided larger quantities of urine than usual. Her decrease in weight in five years is over sixty pounds. At the present time she drinks a gallon or more of water daily and voids from 90 to 105 ounces of urine in 24 hours. Her appetite is good, and her bowels are regular. She complains of dimness of vision and of pruritus of the genitalia.

Social History.—She is a widow and has no children.

Habits.—She eats large quantities of vegetables and drinks coffee three times daily.

Physical Signs.—A general examination shows that the patient is emaciated, the skin dry and anemic, and the glands in axillae and groins enlarged.

The pulse beats 120 per minute, respiration 26 per minute and the temperature is 98 deg. F.

On percussion the heart is found to be enlarged towards the left extending over an inch beyond the nipple line. Auscultation reveals a mitral systol murmur, however compensation is apparently fairly well established. Nothing abnormal can be found over the lung area. The abdominal viscera apparently are also normal in size. The eyes show arcus senilis and a hazy condition of the pupil due to the beginning of cataract formation.

The tongue is coated and the breath has a fetid odor.

Urinalysis.—Albumin, negative; glucose, present amount 6 per cent; indican, positive reaction; specific gravity, 1034; odor, sweet; casts, negative; cylindroids, many; erythrocytes a few; leucocytes a few; urate sabent.

Diagnosis.—From the history of emaciation polyuria, great thirst, prostration on exertion, malaise, dimness of vision, and the urinalysis we can positively diagnose this a case of diabetes mellitus with diabetic cataract formation.

Diabetes mellitus may sometimes be confounded with diabetes insipidus and simple glycosuria.

The differential points are:

DIABETES MELLITUS.	DIABETES INSIPIDUS
1. Fehling's test gives positive reaction for glucose.	1. Fehling's test reveals no glucose.
2. Onset gradual.	2. Onset often sudden, following shock or fright.
3. Seldom nervous manifestations.	3. Patient markedly nervous.
4. Specific gravity of urine high.	4. Specific gravity of urine low.

*Delivered in the Clinical Amphitheatre, Medico-Chirurgical Hospital.

DIABETES MELLITUS.	SIMPLE GLYCOSURIA.
1. Common at all ages.	1. Common in very old people.
2. Glucose is constant in amount.	2. Glucose is variable in amount.
3. Polyuria marked.	3. Polyuria less marked.
4. Pruritus marked.	4. Pruritus absent.
5. Fehling's test responds readily.	5. Fehling's test obscure due to the presence of keratinine.
6. Cause not known.	6. Cause due to injury, drugs or insanity.
7. Complications common.	7. Complications uncommon.

Pathology.—The pancreas is the organ most frequently involved and which shows pathological changes, granular atrophy of Hansemann, cystic degeneration, occlusion of the duct and fibroid induration when diabetes is due to syphilis are frequent morbid changes of the pancreas in this disease.

Gangrene of the lungs and extremities often arises as a complication and destroys the life of the patient. The liver as a rule shows hypertrophy and fatty degeneration.

Hyaline changes and fatty degeneration with other well marked morbid conditions of chronic interstitial nephritis are the usual lesions of the kidneys.

In a few cases there are organic changes in the medulla and the posterior columns of the spinal cord.

Etiology.—The true cause of diabetes is unknown. Many believe it to be due to morbid changes of the pancreas, while others hold that it is caused by organic changes in the central nervous system. Among the predisposing causes are heredity, the Hebrew race, nervous shock and mental worry, obesity, syphilis, malaria, gout and pregnancy.

Treatment.—The treatment should be hygienic, dietetic and medicinal, change of occupation; mental worry from business is especially interdicted; exercise in the open air and sunlight is very beneficial to the patient, especially if his business was one of confinement. Frequent bathing in warm water before retiring to stimulate the functions of the skin.

The diet should mainly consist of milk and nitrogenous foods, such as meat and eggs. Farinaceous foods, especially those containing principally starch and cellulose are to be avoided entirely.

Indeed, milk is the preferable food in most diabetics.

Medicinally.—Arsenic is the drug par excellence for the disease itself, but in most instances hepatic stimulants are essential in lessening the quantity of sugar in the urine. Another valuable agent to reduce the quantity of sugar eliminated is codeine sulphate.

From the condition of the tongue and odor of the breath the patient evidently suffers from a gastro-intestinal disturbance, consequently we will first place her on the combination containing:

℞ Liquoris acidi arsenosi.....f. ℥ii
Acidi hydrochlorici diluti....f. ℥ss
Glyceriti pepsini q.s.ad.....f. ℥vi

Misce. Signa.:—Two teaspoonsfuls in a little water after each meal.

Of course we will change the treatment from time to time, but arsenic in some form will be our chief drug in the treatment.

Prognosis—The patient is past middle life and excretes a large amount of sugar daily, making the prognosis all the more graver. Indeed most patients are never cured. They are often helped by treatment, and their life prolonged for a number of years, although complications are always prone to set in and destroy the life of the patient at any time.

I think the prognosis of this patient is exceedingly grave, and she may not live more than five or six months longer.

Cost of Mosquito Extermination.—Dr. John B. Smith, the New Jersey State Entomologsgist, in his annual report to the Governor says that municipalities are now cooperating with the State in the extinction of the mosquito, and that the time is drawing near when there will not be a mosquito left in New Jersey. The total appropriation for the work for the year was $20,000, of which only $15,458 was used, leaving a balance of $4,542. There were 17,620 acres of marsh land drained, and 2,394,174 feet of ditches were built to keep stagnant water from collecting in breeding places. It is said that the draining of the marshes about Jersey City have caused the complete disappearance of the mosquitoes from that region.

Life After Death.—The lay magazines are devoting considerable attention these days to spiritualistic and other phenomena which are supposed to prove that life does not end in "death," and to methods of communication with those who have "passed over." Those who believe in the so-called psychic phenomena seems to hold the stage, and it is refreshing to run on such a contribution as that of Rupert Hughes in the January Pearson's. We have never been so materialistic that we believed that death was the absolute end, we believe in the continued life of the soul, but we also believe that the soul has better occupation than tipping tables and frightening nervous women. In so far as we have learned no good has ever come from spiritualism beyond the degree of comfort it gave those who mourned those departed.

LEADING ARTICLES

THE TREATMENT OF ACUTE OTITIS MEDIA.*

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WE will consider the acute middle ear inflammations under three groups: (a) Acute otitis media simplex, also termed acute catarrhal inflammation of the middle ear. (b) Acute otitis media purulenta. (c) Acute croupous otitis media. The distinction between the catarrhal disease and the purulent disease cannot always be closely drawn, since they present many symptoms in common and furthermore, the catarrhal inflammation may terminate in a purulent one, so that the difference is rather one of severity of infection and constitutional predilection for pus formation. As a rule, however, the character of the secretion found in the middle ear, together with the accompanying symptomatology, permit of a ready diagnosis, but it is to be regretted that the present state of our knowledge of bacteriology does not warrant a diagnosis based upon the finding of a particular micro-organism among those constantly present in one or the other instances of middle ear suppuration.

The croupous disease is usually associated with diphtheria or scarlet fever, and is characterized by membrane formation in the ear.

Among the causative factors foracute catarrhal otitis media we may mention the season of the year, the greatest frequency being during the winter and early spring months when the sudden severe changes in the weather occur. Severe bodily exertion giving rise to over-heating, especially when the individual is suffering from digestive disturbance and followed by sudden chilling is a prolific cause for middle ear inflammation. The injudicious use of a strong salt solution snuffed up the nose in one instance in my practice necessitated the mastoid operation. Traumatic injury of the ear drum or external ear canal with subsequent infection, may likewise occasion a purulent middle ear inflammation.

By far the most frequent cause, however, lies in inflammation of the nose and throat, be it occasioned by tonsillitis, adenoid growths, or intranasal obstruction, or one of the acure infectious diseases, such as measles and influenza.

Lastly, I should not neglect to mention intranasal operations, such as cauterizations and septal resections. A case in point of this character occurred in one of my patients past the middle of life, who while visiting in one of our large cities suffered a recurrence of an acute purulent middle ear trouble. She properly sought the aid of a distinguished otologist under whose skillful treatment the otorrhea was controlled witihn eight days. However, he informed her that the cure was only a temporary one and to make it permanent she must undergo an operation for nasal obstruction in both nostrils. This was agreed to and the obstructions removed, but after the second operation the ear began to discharge again, and do what the doctor would, he utterly failed in arresting it. He now proposed that they permit him to remove the little hearing ossicles in the ear, but this the patient declined, and elected instead to return home and consult me. After a rather protracted course of treatment the disease was arrested, and my only object in mentioning the case is that it illustrates the possibility of middle ear infection through intranasal operation, and hence one should not too lightly advise one, especially if the patient has passed the middle period of life.

Owing to the fact that children are more subject to adenoid growths and tonsillar enlargement than the adult, and in addition in the child the eustachian tube is shorter with a more patulus pharyngeal orifice, readily permitting the ingress of pathogenic material, they are especially prone to attacks of earache. The symptoms in the child differ somewhat from those in older persons, in that the fever runs higher, is more sudden in its onset, and not infrequently associated with cerebral irritation and convulsions.

As general practitioners, you should recognize the seat of the diseae being in the middle ear, even when you cannot obtain from the child a history of the case or get a satisfactory view of the tympanic membrane, by the fact that after a few hours sleep the little one has suddenly awakened crying, with high fever, and pulling at the ear. If now upon pressure over the tragus you bring out decided tenderness you are pretty safe in making a diagnosis of acute otitis media. In the adult the fever may be slight or absent, likewise the earache may not be severe. Usually there is complaint of fulness in the ear with throbbing pulsation and loss of hearing.

Upon inspection with the mirror and speculum the drum is found reddened along the hammer or throughout, which may be bulging, due to middle ear effusion. In the meshes of the drum hemorrhages may have occurred, and at times blister-like formations, this especially after influenza. At a little later period the tympanic membrane may present a powdered appearance due to

* Read before the Union County, Ky., Medical Sodiety, December 2, 1908,

necrosis of its epithelial layer, and this when rubbed off discloses the membrane of scarlet hue or bleeding in places.

By testing the hearing we find bone conduction of sound prolonged over that for the same tone by air. A vibratory medium toned tuning fork placed upon the vertex is heard best in the diseased ear.

Deafness, however, does not always bear a relation to the evidences of inflammation seen on the tympanic membrane, but rather to the amount and duration of the exudate in the middle ear, and hence the loss of hearing may continue long after the drum has regained its normal appearance. The differential diagnosis of acute catarrhal otitis media, from purulenta, previous to rupture of the drum is not always easy, our chief reliance being the greater intensity of all of the symptoms with tenderness over the mastoid in the suppurative disease. The duration of simple acute otitis media is from two to twelve days that of the purulent form from one to four weeks or longer.

Croupous or diphtheritic otitis media is rather a rare disease, and I have not encountered it more than a few times in my practice. It is characterized by rapid development and severe middle hear reaction with false membrane formation, leading early to perforation of the drum, enlargement of the cervical lymphatic glands and profound general toxemia. The disease is met with as a rule in association with nasopharyngeal diphtheria and scarlet fever. The treatment in addition to antitoxine or that usually followed in scarlet fever, consists of ear douches, preferably with lime water, to which lysol may be added. After the active inflammatory symptoms have subsided a one per cent alcoholic solution of salicylic acid may be dropped into the ear in addition to the syringing. The first indication in the treatment of acute catarrhal otitis media is to relieve earache. For this I use instillations, 8 to 10 drops of warm 10 per cent carbolized glycerine, with external heat, either a hot water bag over the ear or a bag of heated bran. This not bringing relief a dose or two of antipyrine is given and may be morphia adedd when the earache is very severe. During temperature elevation the patient is confined to his room and given a febrifuge of tincture of aconite and spirits mindererus.

Leeches may occasionally be necessary to subdue an intense middle ear inflammation, and are to be applied not over the mastoid, but in front of the tragus. Air inflation of the middle ear either by Politzer's method or the catheter is begun as soon as the most active symptoms have subsided and aids in cutting short the disease by promoting absorption of the middle ear exudate snd restoring hearing. At first daily inflations are practiced, then every other day as improvement occurs. Paracentesis may occasionally be called for in catarrhal otitis media, but as a rule I get along without it.

Existing adenoids, enlarged tonsils or intranasal disease should receive attention from a specialist as soon as the patient has convalesced, since recurrence of middle ear inflammation are thus best avoided.

For acute purulent otitis media the preliminary treatment is much like that outlined in the non-perforative disease. However, if the pain and fever does not abate in 24 to 48 hours paracentesis is done. Much of the pain in this operation can be removed by use of a local anesthetic. The one I employ consists of equal parts of menthol, carbolic acid and cocaine. The external meatus is first sterilized by douching with a warm solution of chinosol 1 to 1000, or sublimate 1 to 5000. Next the canal and drum are thoroughly dried with sterile absorbent cotton wound about an applicator and then a small pledget of the cotton is dipped into the anesthetic and carried by ear forceps down upon the drum over the site elected for incision and permitted to remain 10 to 15 minutes. The cut in the drum is made with a lance-shaped knife from below upward across the bulging portion and brought out at a junction of the superior posterior meatus wall and the tympanic margin. Bloody serum constitute the character of the discharge at first, changing rapidly during the next 24 hours to pus. Paracentesis may also be indicated to enlarge a spontaneous perforation in the drum especially when the same occupies the summit of a nipple-like protrusion of the drum, a not infrequent occurrence after influenza.

The after treatment consists of closing the outer ear with absorbent cotton to be changed as soon as it becomes soiled by the discharge. Irrigation of the ear is begun when the otorrhea assumes a purulent character, and done either with the fountain syringe, or an ordinary rubber ear syringe, using just enough force to occasion as little pain as possible. The solution I prefer is hot water medicated with chinosol. The latter is a German preparation obtainable in tablet and powder form of the Parmele Pharmacal Co., of New York City. Some of the advantages of this preparation are, that it does not coagulate albumin, is not highly toxic, while at the same time it is superior to carbolic acid or sublimate in arresting the growth of the staphylococcus pyogenes aurens, a germ very frequently found in as

sociation with middle ear suppuration. It was because of the frequent occurrence of the staphylococcus in otorrhea, and the reported ready destruction of it by the drug, that I was first tempted to use it. A report of the Council on Pharmacology in the American Medical Association Journal, June 25, 1908, corroborates the statement that dilutions as high as 1 to 200,000 still exert this influence. I usually employ half a table to a goblet of warm water. This strength is well borne by most patients, and besides the preparation has an agreeable odor.

The frequency of repetition of the douche depends upon the amount of discharge and the intensity of the reaction, usually three douchings a day suffice in the severe cases and once a day for those of less severity.

Air inflation of the middle ear is begun as soon as the heighth of the acute stage is passed. Should there be pharyngitis, retropharyngeal applications of argyrol in 25 per cent solution are made after spraying the nose and throat with simple alkaline lotion.

Failure of the outlined treatment to cure the otorrhea, and if the perforation in the tympanic membrane is not small insufflation of a small quantity of powder consisting of equal portions of chinosol and boric acid are used after the douche with marked success.

Polypi are not frequently met with in acute disease of the middle ear, and are best removed with the snare, with later instillations of alcohol and boric acid. A large nipple-like protrusion of the drum may likewise be removed by the cold snare.

The insertion of gauze into the external auditory meatus for drainage in acute middle ear suppuration I do not practice, for the reason that without you can see your patient several times a day, such proceeding is not well borne, and may by obstructing the otorrhea lead to deeper seated ear trouble.

There still remains for consideration mastoid involvement and its treatment. Pain in and around the ear is one of its most common symptoms. Accompanying this there is usually fever and circumscribed pressure tenderness over the fossa mastoidea, which represents the posterior end of the mastoid antrum and the adjoining mastoid cells, and is to be sought directly under and back of the auricle and immediately below the linea temporalis. Percussion dulness, an uncertain symptom, may also be sought for.

Upon perforation of the drum and beginning otoorrhea, the pain and tenderness may in part or wholly disappear and again recur at the same point, or by predilection, occupy either the anterior or the posterior border of the mastoid protuberance, the point over the greatest development of the superficial bony cellular spaces. With the increase of pain and tenderness, swelling and edema may occur over the mastoid or around or in the outer ear. Of special significance is swelling over the posterior superior bony meatus wall giving rise to narrowing or total occlusion of the meatus.

Fluctuation in the external swelling is to be sought for earlier in the child than in the adult. When the symptoms mentioned have persisted eight to ten days without amelioration, notwithstanding recognized proper treatment has been administered, as outlined for acute purulent middle ear disease, or when they have wholly disappeared, either with or without closure of the drum perforation, and again returned in severity and persistency, the mastoid operation may be properly performed. It should not be overlooked, however, that in nearly all cases of severe acute middle ear suppuration following the acute infectious diseases, the mastoid cells contain pus which as the patient recovers is capable of spontaneous resorption.

THE TRUE BASIS FOR RECONSTRUCTED MEDICAL SCIENCE.

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Construction and Reconstruction is the watchword of the hour. "Research" is entering arcana never before attempted or even dreamed of as possible of revealing a possibility, and, as a matter of course, research is followed by reconstruction.

That which is wanted and sought after is the exact and the full—the complete. This is the business of science, this is science. These two, exactitude and complement, in the sense of the full number, are basic in science, and the product is scientific.

Now, much in medicine is scientific, but much is not so, does not measure up to the standard.

For the verity of much pseudoscience in medicine and for expression of ignorance of the action of drugs in therapeutics and scepticism as to efficiency in their use, and their increasing desuetude (mark that) read the remarkable paper by Dr. Charles E. De M. Sajous,* on "The Auto-Protective Resources of the Body—a new Foundation for Scientific Therapeutics." The pessimism of the leading men in the profession at home

*Monthly Cyclopedia of Pract. Med., May 1908 Medical Fortnightly May 25, 1908.

and abroad, fearlessly named and quoted in the address, comes as a wet blanket to one's professional spirit, or would did not one know better oneself, and were there not equally high and authoritative dissenting voices raised and quoted.

Under the discouraging view of appearances on a memorable occasion the prophet Elijah's servant cried out, "Alas, Master, what shall we do?" And the prophet prayed, "Lord, open the young man's eyes." And again the serving man cried out. But his pessimism to the degree of fear was gone, and his notes were even triumphant.

And, bless the doubting souls, at this hour there are thirty-five thousand men in one family, or clique, any one of whom will tell that he has been and is using daily a dozen or score "specifics" that enable him never to say "fail"—and nothing succeeds like success.

Drugs are chemical compounds that have or are competent to undergo certain (some of them known) chemical reactions; and chemistry is one of the most exact branches of science. Certain gaseous elements, under chemical manipulation, are reducible to fluid form, and constitute water. These gases and this chemical reaction are specific for the production of water: formula always H_2O. Basic in therapeutics is chemistry, and medical therapeutics may, and ought to be, as exact as chemistry.

The scientific physician in the use of drugs-preparations knows that these initiate chemisms as exact, though not always as simple as in the H_2O phenomenon, and he relies upon these chemisms to be causal to the response in physiologic processes on the part of the organism under manipulation. He knows too that if he fail in knowledge and skill in the administration of the drug-compound he will set up such chemical reactions as will furnish him with pathologic or even lethal results to combat, if he can!

And hence, in text of this discussion it is justifiable to note that the physician's is the highest most complex and responsible of all human tasks and positions. The cure of souls even comes after that of the body. Hence, the supreme importance of a correct basis for medical science in which the therapeutical, and of consequence the pharmaceutical, are essential and vital. The pharmaceutical chemist may well walk with head just below the clouds, he deals with those high things and links arms with the therapeutist, and together they manipulate, changing, modifying and rearranging the processes and functions of the most complexly intricate of all cosmic phenomena. I submit the following facts and principles as cardinal in this foundation:

I. The phenomena of a living thing are organic. That is to say, they are organized, systematical, directioned with purpose to an end, and so functional—the tout ensemble of the phenomena of a living thing, plant or animal. The physical processes—molar, molecular, atomic and electronic—are in interest of a function or functions to be achieved, and when the function is effected the purposive, or directional, in that particular phenomenon is attained. The purposive in the function which is the goal of the material processes is as entital, or real, as the processes themselves, the function, however, being of a different order of phenomena. We are in the realm of science, and these distinctions are scientific.

Hence it is that organic-physical processes are cycling in character and of such continuance as to achieve the end purposed. For instance, take digestion, a quite complex physiological phenomenon with congeries of molar, molecular, atomic and electronic processes and functions galore, so that to speak of digestion as a "matter of pure chemistry" is an utterly incompetent estimate.

Just a word as to food tobegin with. Digestion is really the basis in the production of the food to be digested, and this in the elaboration of the nutrient proteids in their first as well as their last analysis. Digestion and vitalization or transformation of the inorganic of gases, earth's minerals, etc., by the life-processes of the plants, supplemented by the physiologic functions of micro-organisms in nitrification, lift up the elements and factors of the inorganic into the organic world, such foods alone being competent to animal sustentation. And that such a phenomenon be designated a "synthesis" or conceived as possible of production as a chemical or laboratory synthetic achievement, surely cannot be a serious proposition. However, in the analysis of digestion proper, as this function may be designated, food is first prehensed*. Then it is to be masticated.

The food is comminuted and mixed with the salivary juice in every last particle. In this there are different classes of physical processes with perhaps incipient chemisms.

*Two facts or classes of facts must not be overlooked in addition or complemental to the usual and essential to a "last" analysis. One is as to animal digestion of animal food: is this in any particular a different phenomenon from animal digestion ofvegetable foods? The other is the recently ascertained certainty, apparently at least,of "the vitalization of inorganic phosphorus by animals." (Science, August 14, 1908, page 218.) This is a marvelous fact and cognate with whatthe writer ascertained and published ten years ago in The Kansas City Medical Record, namely, that phosphorus in some similar form was given to "consumptive patients," fifty percent of whom were believed to have recovered in consequence. Specifically, in what way was the inorganic compound utilized, then and in the recent research experiments?

And so specific are these that there have been brought to mathematical definiteness the number of times the upper teeth must be brought down upon the lower ones, and the tongue, etc., change the location of the different viands in the mouth, until finally the molar "catabolism" has given place to a similar "anabolism" and the bolus is ready for deglution—another function and process leading to the entrance upon the next stage in the drama now exacting. These processes are cycling in character and woe to him who stops before the completion of the cycle, for the "pound" will be exacted of him to the last farthing of it.

We have scarce passed the threshold of the digestive phenomenon, yet our kaleidoscope has made to pass before us physical processes, groups of them cycling and specific to mathematics in character, the groups congeried in number and class, the completion of the cycles in movements contingent to the achievement of the functions, and the whole progressively to complexity, or from the homogeneous to the heterogeneous, from the simple to the complex, for we are in the realm of the evolutional, and evolution is the master-key interpretive.

We will not enter the arcanum of the physiological further at this moment, and this peep on the threshold of the opening door is enough to establish our first basic point and principle, namely, that living phenomena are organic, organized and specific in this unique sense. These are the factors and processes and functions medicine has to do and to deal with. They are physical, chemical and psychic, and the doctor who undertakes to treat a case of "indigestion" or "stomach trouble" (that scapegoat for professional ignorance and sin) with "pure chemistry" in mind only is centuries behind his age. Stahl knew better two hundred years ago, and so wrote.

How may a physician truly diagnose his patient's disease? He may not, he can not, unless he has a correct conception and knowledge of the norm in the organic, or physiological. The late Professor Virchow only a few years before his death confessed himself as "seeking among the mazes for the point where the pathological becomes the physiological," and was devoting the remainder of his life to that pursuit. Is it possible that the man who knew more about pathology than perhaps any other man (see his "Cellular Pathology"), is it possible that he was not clear in his conception of the organized, the physiological? In his lecture in London (on the same occasion, if memory serves) the other, perhaps more creditable, if not more memorable, statement was made that it was "essential to the practice of medicine that the practitioner construct for himself an objective picture of the nature of the vital processes." Such a constructed picture true to life is alone the correct basis for medical science and art. Such a picture or panorama, as true to life as we have been able to construct it,* has established our first point and principle and now introduces the next.

II. The pathologic in organic, or organized, or living, phenomena is simply deranged or abnormal physiologic-organic processes and functions. There are "no mazes" here.

In pathologic condition and function and process, nothing is added or introduced necessarily that did not before constitute the organism in factor or function. The organism itself wholly and solely effects its own phenomenon. No new or different or other forces or functions or factors necessarily complicate the organic and physiologic already in existence and in activity. In disease nothing originates, in strict scientific thinking. Modified processes are initiated, and these results in modification of the functions; which is to say, that the purposive which gives character to the function being modified by the induced changes in the environment and stimuli, produces change in the physical processes. Not a new bit may have been added or a piece taken from the kaleidoscope, whatever the picture presented, and "germ" and "remedy" or drug must be placed and accredited and accounted for cognately with these stern facts.

All life or organic phenomena are physiological, and as designated and described in our part I. They are physiological in a normal sense and degree. They may become abnormal, supernormal, subnormal, but always as defined, physiological. To concede this, which is undeniable, is to deny the "germ theory of disease," so-called, and the "physiological action of drugs" or other medical armamentaria. The one "remedy" is the organism itself, in the use of its own physiological functions and power in so far as may be conditioned on its hereditary endowment and present environment.

Of course it is recognized in medicine that the terms "germ" and "remedy," etc., are not exact, are general and accommodational merely; the profession understand all of this, at least it must be so supposed. Nevertheless it is unscientific, an excuse for lazy intellectuality, a reproach to medicine as a science, and last, but not least, misleading and like sin self-perpetuating.

This second principle basic in correct medicine, self-evident in presence of the facts in the organic phenomenon, evidences

that remedial phenomena are simply and purely modified normal physiological functions and processes, those of the organism itself and in which it is magisterial and dominant. The organic and physiological is the a vis medicatrix naturae," and the pathological is the aberrant of the physiological. Then where are disease organisms, "germs" so-called, and remedies? Are they ruled out? By no means! This principle, however, enables us to place them correctly, to understand their role, and to interpret the phenomena scientifically.

III. A further fact and principle is necessary of recognition to reinforce and complete and so to establish the verity and validity of the basis in medicine as here exploited.

It has been shown that the living, or the organic, is physiological—the cycling, the congeried cycling, or the purposive in the functional. The complemental fact and principle is the responsive. Organic phenomena are responsive and therefore contingent on the conditional and the stimulant.

Given the organic germ, and there are with it, as its endowment, potency and promise to the utmost of the physiological possible to that grade of organism. But the potency is latent and promise is in recession, waiting on the environmental and stimulant. Deposit the germ of a coccus or a bacillus in a suitable culture medium (which is known to science), and a fully developed micro-organism, with family and colony, will come to realization. Substitute for the bacillus the spermatozoon of a canine or ape, and it will perish—no dog or monkey will materialize. The environment gives rise to no responsive organic phenomena, although the potency and promise to the full were not lacking. Physiologic phenomena are r esponsive, magisterially potent, yet contingent. Given the living germ, environment is just as essential to the phenomenon. Pabulum alone is not sufficient for a bacillus germ in potency to inaugurate its germination; stimuli in temperature, etc., are essential also.

But, and advancing, given the spermatozoon and ovum, with maternal host in normalism, and the physiological would go on eternally physiological—subject to the limitations of the heredity of that kind of organism—if no change in environment (conditions and supply) occurred.

Hence the etiology of disease and the specific phenomena, both pathological and therapeutic; both, and alike, being of the organism itself.

The organism, therefore, operates itself. It is not effected as a phenomenon, or in any part of it, partly by its own forces and factors and partly by complemental externals —a la the germ-theory of disease and the physiological action of drugs. Everything external is conditional and auxilliary where it becomes a factor in the phenomena—to organism alone regnant and reigning. A famished man must fatten himself if he ever shall get flesh on his bones, which he will do if he be furnished with beef and bread. The food is "passive," though if the bread be "raised" and eaten hot it may initiate terrific chemical reactions which will give "stomach trouble."

Precisely so in therapeusis. The drug has no physiologic action. It is a chemical in compound and only competent to phenomena of its own order and kind. The cycling and congeried cycling and functional of the physiological are of such specificity and uniqueness as to mark them off as of another order and kind from the inorganic, and only in recognition of these facts is correct conception and competent interpretation of the organic phenomenon possible.

The actions of drugs, consequently, may only be chemical, in themselves considered, and causal or provocative of physiological response of the organism. Everything to be designated physiological is functional, is of the organic, and is effected as the response of the organism as a phenomenon to the environmental, the provocative or stmiulant. Change, modification and the taking on of special direction of the processes and functions heretofore in operation are guaged by the kind and energy of the chemical reactions therapeutically designed and set up by the administration of drugs. And if this be not the only it is certainly the chief and the exact means and method. Knowledge and skill here and in this renders the medical man competent of the situation.

Micro-organisms—disease-organisms, because so often found associated with disease (and this is our utmost concession), foolishly termed "germs" of disease, because incidently found as factors in pathologic condition and processes—have the same general relation to disease-phenomena that drug-action has to therapeusis; they are causal or adjuvant to the physiological which is then in modification.

If neither causal of change nor adjuvant in intensification of the induced pathological, micro-organic activity is harmless and helpful in the normal, or physiological, and is part of the ensemble of the organic phenomenon. Micro-organic activity, to be sure, is physiological, in the own life processes of these creatures. These, inclusive of their continuance or perpetuation, exhaust their utmost purposive role. They have no

"virulent" properties or virulent activities, in themselves considered. The virulence is wholly on the part of the superior organism, the latter being provoked or stimulated to such abnormality as the case presents in response to the complexity or intensity of the chemisms induced in the micro-organic physiological processes. These disease-organisms are incompetent to disease in their physiologic phenomena and therefore may only incidentally be causal or adjuvant in their relation to the disease-phenomena of superior organisms. The germ-theory of disease as exploited today has overlooked these cardinal facts and magnified unwarrantably the nature and role of micro-organic activity. This assumes that the purposive of these low-grade and infinitesimal living things was to produce disease, and the purposive of a certain class of cells was to combat and destroy, ingest, them. Amazing and extravagant hypotheses and theories arise, as the utilization of the parasite function and phenomenon to offset that of the major micro-germ-theory in the industrial entail, etc.

These recent hypotheses are only possible of imagination when the magisterial place and role of the superior organism are non-recognized or discounted by the exagergated place given to the minor factors.

The relation of micro-organic activity, causal or ancillary to disease, must be stoutly maintained to be incidental and not a necessary part of the organic phenomenon.*

And are not these things so? Are not these the facts in the case? And is not the cardinal fact and principle in medicine the organism itself, magisterial and efficient to all of its phenomena?

From this, then, it follows that pathologic condition and activity, and therapeusis, are special and induced physiologic phenomena. Pathology is simply abnormal physiology, and not some new or different phenomenon with other factors and forces effective in it which a "germ"-theory certainly implies. And therapeusis is merely specialized physiologic phenomena in return from the pathologic to the normal. The causal factors in the induced pathology and the incitant or excitant factors in the equally induced therapeusis (in special examples) are, in the strict and metaphysical sense, external and foreign to the organism, the effective agency in the phenomena in all its variations.

The specific action of "virus," of micro-organisms, or other factor is chemical, simply, or physiological, which is chemical plus the organic factor, both or either being distinct, however, from that of the superior organism, and may be "action at a distance" in the disease-phenomena in which it is causal or ancillary. The micro-organisms may fight for their life in phagocytosis, and the micro-organic and the organic processes be combined, as of course they will sooner or later in their complication with disease or even in the projected utilization of the parasite phenomenon or the almost weird phyothesis of Metchnikoff, the introduction of the lactic acid microbe to offset the phagocytism in senilism.*

Just so in directly induced therapeusis the drug-action is simply chemical, and "action at a distance" may interpret its activity and role. Or in other conditions the chemisms of the drug-compound may combine with the biochemical processes of the physiology in process, in which case action at a distance is not the principle in interpretation, the causal or adjuvant nature of the factor and its activities are the same, nevertheless. This is a line of research less facile of following than it should be, because of departure in the recent decades from the real basis alone on which may he safe building in medicine.

It is, therefore, veritable that in so far as present knowledge is competent to collect and collate and interpret the facts in the phenomenon of disease and of its so-called "cure," chemistry, chemical factors, and their reactions, however induced or initiated, are the chief if not the only agent in therapeutics.† The therapeutical is the medical, drugs are the chief or only armamentaria, so that in the scepticism and misuse of drugs the medical man simply steps down and out.

Change in modification of organic process and function initiates in the protoplasmic activities of the cells. Therefore factor and agency in this initial change in process and direction of it may, in the last analysis, only be in the nature of action at a distance, which is so fundamental a factor and principal in organic phenomena, which are in the genius of them so cardinally responsive in character. It has long ago been said that "vital action is modified by every substance which comes in contact with the living matter," a statement itself needing modification, though true as a general principle. What single fact is there to evidence the entree intracellularly to protoplasmic activity,

*I will venture the opinion that micro-organic activity in "nitrification" in the formation of the higher cereals is largely so interpretable.

*Quo Vadis.

† I use the term "therapeutics" as distinct from "therapeusis," the latter being solely or magisterially of the organism, which in medical interference may be induced by therapeutics. The therapeutics may be combined with and go to make up the therapeusis.

save the one instance of the nutrient proteid itself, as I have held and elsewhere often shown to be the acmean physical products of the organic phenomenon? The nutrient protein-substance enters immediately into the august presence of the cell-bioplasm, is, in fact, taken up and into the substance of the living matter, losing its identity as a proteid and becoming by potency inherent to the living substance, itself living, that is to say, possessing and exerting and passing on in due time the same vital potency as that into which by intussusception it was taken as copartner. Any man who can handle the microscope with patience can see these things for himself, and may see arise new foci of origination of new centers of vital activity in the already living substance. The history in the histology of the nutrient proteid substance may be followed or traced back, and this will demonstrate the pyramidal status assigned it. Now, no other cosmic factor as a secondary product, no other phenomenon in change back to the primal in substance and role is the counterpart of this. And no other factor may come into immediate contact with living, or primal, substance, to become coactive immediately with it in the primal and magisterial function. Other factor, all others save this one, must act dynamically in induction of change in this primal and regal bioplasmic activity and function, and operate as above stated, on the basis of action at a distance. We know what electric bombardment of secondary factor and function may do in consqeuence of the splendid work of Professors Loeb and Mathews of California and Chicago univeristies.* But is there one fact in evidence of this as to the primal? My kingdomfor the fact.

Here, then, is the true basis for "scientific therapeutics" (Sajou), and for medical science entire. Nothing new either, or farfetched. The three stones discussed here will hold up a finished structure, the temple of true medical science. Hypotheses and theories arise, unstable in character, only to retire and give place to others of like tendency. And though the world owes much to medicine, and the medical profession is doing more for society than any other body of men, the confidence of thoughtful people is not now commanded—and no wonder, in view of the facts confessed in Dr. Sajous' paper. This discussion is offered as the writer's mite in reconstruction.

"Nose-picking" may result in a perforation of the septum.—Amer. Jour. of Surg.

* The writer is glad to acknowledge debts of thanks to these men, notwithstanding his sometimes critique of some points in their assumed positions.

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EDITORIAL

Immature Specialism.

It is a deplorable fact that the medical schools of today are graduating too many specialists and too few general practitioners. While it is recognized that the only proper preparation for special work is a long experience in general practice, an experience which will keep any specialist from being able to see nothing outside his own field, this is theory; but it has come to be the rule that the specialists of the later generations have never seen general service except, possibly, in the form of a brief interneship in some hospital. Many begin their medical course as specialists, and only give so much attention to branches in which they are not interested as will insure graduation; they emerge from a medical school with a diploma and a one-sided education, their horizon is limited and they will never be able to weigh facts impartially or reach the real niceties of diagnosis. A reformation within the faculties of medical schools is imperative if the general practitioner is not to become extinct.

Speaking to this text Dr. Robert Peter, of Chicago,* urges the need of reform; he narrates various instances which make ludicrous the astigmatic "specialist" who can see nothing outside his own little field, and takes it for granted that nothing else exists. We like his general remarks. He says:

"The danger of modern specialism is a tendency to too much exclusiveness and a neglect of generality. The autumn harvest follows only a long summer. It takes time to bring roses. The sun's rays must be long and strong ere comes hue and fragrance. At the present time, young medical men plunge too directly and early into specialism. They have not acquired a large fund of general knowledge and the mature experi-

* Medical Era, February, 1909.

ence which it brings by practice. We all well know how in a machine one wheel must fit into the cogs of another wheel. Bartholow's ideal of a specialist was one who is the outgrowth of an experienced general practician; one in whom time has proved taste and adaptation from experience in general work. The elder Gross used to say, the reason that he was a good surgeon was because he was a good physician. If nothing else, his antimonial and saline mixture proved this. This is the history of past specialists. Gross started out as a general practician; then a few years as a teacher of general pathology in a medical school at Louisville, Ky., from where he was called to his Alma Mater, to the chair of surgery for over forty years. Take Senn's career; when graduating, his thesis was Digitalis Purpurea; he located in a small country town in Wisconsin, where he practised general medicine. Only after this did he develop into a great surgeon. His fine diagnostic acumen showed that at one time he had the advantage of general practice. Koch and many others started out in general medicine and only later in life developed into specialists. These represent mature specialism. Alas! the modern specialist is no longe the outgrowth of general experience. He hastens to specialism and too often of the immature kind. From his lack of general knowledge and experience with general medicine, he travels in his narrow groove and sees everything from the viewpoint of routine and narrow mind. General principles have slipped from him, because they were never firmly fixed. He cannot see with broad vision."

The Medical Dispensary Evil.

THE abuse of the medical dispensary and its effect on the medical profession has become so common a topic that it seems evident that a reactionary movement must soon follow. Aside from the dispensary which is connected with a medical school and has the double excuse for existence, education and charity, and the so-called charitable dispensaries, there seems to be little reason for existence of such institutions and their existence is maintained at the expense of the medical profession. That it is exceptional for any real investigation of ability-to-pay ever being made at these institutions is a well-known fact, and many a man or woman with an independent little business and a growing bank account will be found among the patrons, not to mention the occasional "pauper" who drives his own carriage and employs servants. In the conduct of charitable dispensaries there are many things which appear hard to understand; why should the physicians be expected to give their services when no one would ever think of asking the same generosity from the pharmacist? Why are the poor in the large eye clinics required to pay 25 cents for the service of the pharmacist in dilating pupils, the solution costing practically nothing? and who gets the is money? the pharmacist? The dispensaries are run at the expense of the profession; we give our service and we give the patients in every instance where a patient is treated who could afford to pay for treatment, then we doubt if there is a physician in St. Louis who does not do a generous amount of charity work in his own office, and did any one ever hear of the doctor's name being overlooked in the making up lists for solicitation in the interest of charity?

A movement to correct the dispensary evil was inaugurated in New York City last Fall, and has resulted in the formation of the Joint Committee of the Medical Societies of the City of New York." In reporting the progress of the movement American Medicine says:

"The Joint Committee held a meeting on Tuesday evening, December 15th, 1908, at the Cafe Boulevard, 156 Second Avenue, which was attended by over 400 physicians, among them being men who are practicing in all parts of Greater New York and neighboring New Jersey cities. The principal speakers were Dr. S. S. Goldwater, superintendent of Mt. Sinai Hospital of New York, Dr. Wolff Freudenthal, president of the Eastern Medical Society, and Dr. M. Frankel, president of the Physicians' League. District Attorney Jerome, who could not be present at this meeting gave assurances that he would give all the legal co-operation within his power. Among the hospitals and dispensaries represented were the Mt. Sinai Hospital, the Post-Graduate Hospital, the Lebanon Hospital, Beth Israel Hospital, the Good Samaritan Dispensary, the Cornell Medical College Dispensary and the German Poliklinik.

The question of the abuse of medical charity in dispensaries was thoroughly discussed and the following suggestions were made, their further consideration to be taken up at subsequent executive meetings of the Joint Committee:

1. That the physicians working in dispensaries should receive a salary.

2. That a certain percentage of the Board of Directors of the Dispensaries should be physicians.

3. That the matter of abuse of medical charity should be brought to the attention of the State Board of Charities, in order to secure the co-operation of that body.

4. That the nominal charge of ten cents now paid in the dispensaries for tickets of admission and treatment be abolished; the idea being that the dispensaries will then be compelled to treat the masses gratis, thus cutting off a great deal of financial income, which will force the smaller dispensaries who depend solely upon this income for their maintenance, to go out of existence. The effect of decreasing the number of dispensaries in each neighborhood will increase the responsibilities of the larger ones and when they are compelled to draw solely upon their membership for maintenance, they will be forced to seek ways and means of discriminating in admissions. This will reduce the crowds and it is believed tend to limit the treatment to only the worthy poor."

It is to be hoped that this movement will succeed in New York and spread to other cities. May it speedily come to St. Louis.

James B. Warbasse, formerly editor of the New York State Medical Journal, has joined the staff of the American Journal of Surgery.

W. B. Saunders Company have issued an edition of their illustrated catalogue. This little book contains a large number of excellent illustrations taken from the various text-books issued by this firm, several of them being reproduced in colors. A copy will be sent gratutiously to any physician requesting it.

London Hospitals.—The work performed by the London hospitals in a year has been summarized by Mr. Percy E. Braun, the winner of the Howard Medal of the Royal Statistical Society for an essay on "The Cost, Conditions and Result of Hospital Relief in London." The chief items are as follows: Number of hospitals, 123, including twelve children's hospitals; total ordinary expenditure, $5,000,000; cost of provisions, $1,250,000; surgery and dispensary charges, $590,000; number of beds, 10,947; daily average of beds occupied, 8,977; in-patients, 132,670; out-patients, 1,871,495; out-patient attendances, 5,200,705; income from invested property, $1,300,000. Mr. Braun finds that the management expenses of the hospitals varies from 1.3 to 26 per cent of the total ordinary expenditure. The most economical working in this regard was secured by the very large and the very small hospitals.—J. A. M. A.

MEDICAL PROGRESS

Comprising the Regular Contributions of the Fortnightly Department Staff.

INTERNAL MEDICINE.

O. E. LADEMANN, M. D.

Tuberculosis in Panama.—Brem (Jour. A. M. A., Jan. 30, 1909) found tuberculous lesions in 74.2 per cent of 287 autospies. A great majority of lesions were small focal ones and appeared to be healed or arrested. Only twenty-one, or 7.3 per cent, of the 287 deaths were due to tuberculosis. Pleural adhesions were present in 65+ per cent. Of the pleural adhesions 54.5 per cent was probably the minimum due to tuberculosis. Adhesions occurred much more frequently when tuberculous lesions were on both sides of the thorax than when on one side only, and much more frequently also when the lungs (or the pleurae) were involved than when the involvement was limited to the peribronchial lymph nodes.

A Study of the Respiratory Signs of Chorea Minor.—Graves (Jour. A. M. A., Jan. 30, 1909) emphasizes the following respiratory phenomena to be observed in Sydenham's chorea: 1. Irregular breathing. This is due to two factors: (a) Lessened amplitude in some respiratory movements and increased amplitude in others, giving one the impression that no two respiratory excursions are equal. (b) Sudden halts—cogs occurring either during the inspiratory or expiratory phases and most frequently during the latter, but rarely more than one cog occurring in any phase. These do not occur in every respiratory movement, but are of frequent occurrence and appear to be due to a sudden arrest of the movement in one phase by the development of an incomplete movement of the opposite phase, but the original movement usually goes on to completion. These cogs render the respiratory movements distinctly jerky and may well be called choreic inspiratory and expiratory cogs. An inspiratory cog occurs most frequently near the end of expiration, and an expiratory cog near the end of inspiration. 2. Now and then a sudden deep inspiration occurs far exceeding in amplitude the usual unequal inspiratory movements, and is increased by a sudden explosive (forced) expiratory movement the whole differing essentially from a sighing respiration by its rapidity in its every phase and by the absence of a pause at the end of expiration. 3. Relative decrease in the length of the normal expiratory phases and relative increase in the length, or the so-called normal expiratory

pauses; so that the time of an expiratory phase may become equal to or less than the time of an inspiratory phase, and distinct pauses are of frequent occurrence at the end of expiration. 4. Sudden changes from abdominal to costal, or from costal to abdominal breathing, occur frequently, both being observed at times in a single respiratory excursion giving one the impression for the moment of a combination—a mixture of abdominal and costal breathing, and the frequent impression of incoordination—a dissociation in the respiratory movements. When "pure abdominal breathing" occurs in chorea, movements of the whole chest are reduced to a minimum, and when "pure costal breathing" occurs the upper abdomen remains practically motionless. 5. The respiratory rate is frequently accelerated, and occasionally this may be slower than normal. Not only may these phenomena be seen even in the mildest cases of chorea minor, but one may also become aware of them by palpation and auscultation. When the cogs occur, there seems to be a sudden reversal in the direction of the onrushing air; at any rate, at such moments the respiratory sounds close abruptly and then begin again. Certain of these respiratory phenomena are seemingly among the earliest manifestations of the disease, are prominent throughout its active stages, and in many instances persist in an attenuated degree for a considerable period after the disappearance of all the general and other usually recognized motor manifestations of the disease.

The Presence of Tubercle Bacilli in the Circulating Blood in Tuberculosis.—Rosenberger (Am. Jour. of the Med. Scs., Feb., 1909) studied 50 cases. Of these 5 were diagnosticated as acute miliary tuberculosis; 2 as fibroid tuberculosis; 1 as pneumothorax; 15 as incipient tuberculosis; 23 as moderately advanced; and 3 as laryngeal tuberculosis. In every case tubercle bacilli were demonstrable in the blood in varying numbers. His observations lead him to the following conclusions: It appears that tuberculosis in all its forms is a bacteremia. Even in healing cases, or those in which the disease is being arrested, tubercle bacilli are demonstrable in the blood, although usually in small numbers. In subjects dead of the disease, if histological examination of the liver, spleen and kidney are made, one would find scattered miliary microscopic tubercles, which strengthens the above assertion. Only a small number of cases are reported, but it seems that even in this small number the constant finding, especially in cases of incipient tuberculosis, before the detection of the bacillus in the sputum, is quite a valuable procedure. Again, it appears that the theory of mixed infection late in the disease does not always hold, for the reason that if tubercle bacilli are demonstrable by this method other organisms should be just as evident. For the author's technique, which is simple, we refer the reader to the original article.

Diagnosis of Acute Miliary Tuberculosis.—Von Ruck (N. Y. Med. Jour., Dec. 26, 1908) emphasizes the following points as valuable in differentiating from other infections: 1. The rapid emaciation which is a striking feature in almost every case, and is out of all proportion to the degree of force, the state of the digestive organs and the amount of food taken. The bronchitis of acute miliary tuberculosis of the lung is characteristic in that the catarrhal signs appear first in the smaller and then extend to the larger bronchi instead of the reverse order, as ordinary bronchitis. In further contrast to the ordinary bronchiolitis the lower posterior portions of the lung in acute miliary tuberculosis are often less involved than the upper. 3. Cases in which typhoid fever is minutely simulated by acute miliary tuberculosis, or in which the two diseases exist are rare, and a careful study of the pulse, temperature, and respiration will usually lead to a correct distinction. 4. Serum reactions are reliable when present in well-marked degree, but tuberculous patients may show a modified Widal reaction and the Arloing-Courmont reaction is not always present in tuberculosis. 5. The ocular test as applied by Calmette and the cutaneous application of tuberculin according to the method of v. Pirquet, while not yet established as thoroughly reliable are safe, and one or both should be employed in all doubtful cases, especially if the subcutaneous injection of tuberculin is contraindicated. 6. Bacteriologic examinations of the blood feces, and secretions may be of great aid in doubtful cases. 7. The appearance of choroid tubercle or miliary tubercle of the visible mucous membranes in the course of the disease removes all doubt.

Lactic Acid as an Agent to Reduce Intestinal Putrefaction.—Heinemann (Jour. A. M. A., Jan. 30, 1909) discusses the subject at length, saying that the usefulness of lactic acid or lactic ferments as curative agents for intestinal putrefaction is still problematical. Much evidence in its favor has accumulated of late years, and it is to be desired that exact scientific investigations of a decisive character will be undertaken. The evidence in favor of the use of B. bulgaricus as a

lactic acid producing organism for the purpose of arresting intestinal putrefaction is not convincing. The association of strept. lacticus with the Bulgarian bacillus leaves doubt which one of the two organisms is the one responsible for the beneficial effects claimed. The Bulgarian bacillus produces a disagreeable taste in the milk by decomposing some of the fat and the addition of strept. laticus is universally practiced to overcome this difficulty. The experiments which have been reported in regard to finding the Bulgarian bacillus in the feces are incomplete in so far as no statements are made in regard to the number of these bacilli found in relation to other intestinal bacteria, especially in relation to intestinal streptococci. Assuming that the presence of free lactic acid in the digestive tract is beneficial, it has not been definitely shown that lactic acid is actually produced in considerable quantity by the presence of lactic acid bacteria in the intestines. The evidence is decidedly in favor of the introduction of sour milk or pure cultures of lactic acid bacteria in connection with a diet in which milk is a prominent feature. Lactic acid forming bacteria are constantly present in the digestive tract, and we have no convincing evidence that the additional introduction of lactic acid bacteria is of benefit. There is so far no convincing evidence that sour milk prepared with commercial cultures is perferable to naturally sour milk, as far as therapeutic effect is concerned. It seems advisable, however, to boil or pasteurize milk if good reliable "certified" milk is not obtainable, and if this is done an artificial starter is necessary. For this purpose either one of the above discussed preparations may be used., or one of the commercial butter starters. In those countries where sour milk is generally used the starter consists in a small amount of the previously prepared milk. This can be done with any other starter. A small amount of the prepared sour milk may be used for inoculation of the next lot after this has been boiled or pasteurized. In spite of Metchnikoff's statement that the presence of yeast is detrimental, the commercial preparation investigated, excepting only lactone, contain yeasts in large numbers. Undoubtedly some alcohol is produced by these and probably some esters which impart aroma to the sour milk. Yahourth of the Bulgarians, kefir, koumiss, leben and all other fermented milk beverages contain alcohol forming yeasts, although the amount produced is very small. Although the sense of taste is, largely a matter of personal judgment and idiosyncrasy, it is a matter of no inconsiderable importance. A product of pleasant taste is surely of higher value than one which is disagreeable, and this point should not be neglected. The results of the samples tested are fairly consistent and a careful perusal will show that there is a decided preference in some cases. The taste produced by the activity of strept. laticus, perhaps with additions of an aroma-producing yeast is without doubt the most preferable and evidence in favor of the use of this organism must of necessity be of great value.

DERMATOLOGY.

ROBERT H. DAVIS, M. D.

Modern Dermatological Pathology and its Relation to Therapeutics.—C. J. White (Jour. Cut. Dis., Nov., 1908) gives an extensive review and discussion both of the drugs and other remedial procedures used in dermatology in the past, and especially of those brought forward within the last year or so. As regards new drugs externally used, he has found methylene and pyoktanin blue and scharlach R. of distinct assistance in cleansing foul ulcers, and stimulating granulations, especially in trophic disturbances, and "the arteritic sores consequent upon senility or the over-exposure to X-rays."

Of the new dusting powders, aristol, nosophen and tannoform, have given the best satisfaction as substitutes for iodoform both in the treatment of purulent ulcers and hyperidrosis. (To these should be added xeroform, which in 5 to 10 per cent strength in ointment, or occasionally as the powder alone, furnishes a most valuable antiseptic and stimulating dressing for indolent ulcers. —Ed.)

In seborrhoea, euresol has been used as a substitute for resorcin with good results, for it is less irritating, and discolors grey hair but little. Combined with corrosive sublimate, formic acid and alcohol. White finds it the best local liquid application to date for curing dandruff. Another useful drug, in the treatment of seborrhea capitis, is captol (an impure mixture of chloral hydrate and tannic acid). This acts well on the hair when combined with chloral hydrate, tartaric acid, and alcohol.

Trikresol has proven a useful substitute for croton oil in alopecia areata.

Orthoform, in ointment form, is certainly a great help in the treatment of painful ulcers, but as White says, it is often tissue toxic. (Anesthesin is less reliable, but also much less tissue toxic, and so is worthy a trial as an analgesic before one turns to the drug first mentioned.—Ed.)

As to new drugs for internal use, the employment of lactate of calcium in small continued doses, or the chloride of calcium in one or two massive doses, has been advised by Wright and others, together with the avoidance of acid food, and as far as possible a milk diet, for urticaria, chilblains, and purpura. The dietary suggestions seem valuable, and, at times, the drugs mentioned do good.

Iodide of potash is a valuable remedy for blastomycosis.

Mercury gives excellent results in lichen planus, decidedly better than arsenic.

In leprosy, chaulmoogra oil, given in capsules, milk, or emulsion, exercises a helpful influence, but Dyer has obtained the best results by modern hygienic procedures.

After exposure to syphilis, inunction of the penis with 30 per cent calomel has aborted infection in one human subject at least, and several experimenters have found this procedure trustworthy in apes. Neisser says the same results may be obtained by .3 per cent bichloride of mercury, 10 per cent quinine-glycerine-water solution, or 50 per cent iodoform-glycerine.

A distinct advance has been made in the new drugs brought out for subcutaneous use. In the subcutaneous treatment of syphilis the grey oil, the salicylate and cyanide of mercury are much used especially abroad, while the soluble bichloride is rather more in favor here. (The succinimide and salicylate are much used in this country, however.—Ed.) European investigators have found that combinations of salicylic acid and of arsenic with mercury seem to exert a more powerful action than a salt of mercury alone. Enésol, the salicyl-arsenate of mercury, has given excellent results when injected. Besides its rapidity of action, it has the important advantages of painlessness and freedom from resulting infiltration. This drug has also given excellent results in lichen planus. Some investigators have tried arsenic without mercury, using atoxyl (arsenic acid anilid) with success. Neisser uses acetyl, which is far less toxic and sterilizable. Other authorities, however, condemn atoxyl, and especially arsenic in the form of sodium cacodylate (sodium dimethly arsenate) which has given rise to dangerous toxic symptoms, and even blindness from its effect on the optic nerve. Atoxyl is reported as successfully employed in leprosy and granuloma fungoides.

Thiosinamin has increased the numbers of its adherents as a solvent of hypertrophic fibrous tissue, and even stronger reliance is placed in fibrolysin (a combination of thiosinamin and sodium salicylate). White, however, believes wide surgical excision to be the best cure for keloids. (Many surgeons and dermatologists will disagree with this conclusion.—Ed.)

As regards radiotherapy, the author gives quite an extended discussion of the pathological changes due to the application of X-rays, finding that "X-rays in sufficient doses produce an atrophy of all the appendages of the skin, degeneration and eventual disappearance of glandular cells, and retardation in growth, or at times destruction, of bacteria. In moderate doses, the rays act as a stimulant of metabolism and as an anodyne, while in heavy or long continued amounts, they produce destruction." X-rays may possibly become an adjuvant to opsonic treatment, for a striking rise in the opsonic index has been observed after exposure of the diseased skin to X-rays. Owing to the fact that the frightful ulcerations occurring occasionally, from an overdosage of X-rays, are due to an endarteritis, radical surgical extirpation of the diseased area followed by skin graft seems the only procedure in such cases. Epitheliomata resulting from over-use of the rays should, of course, be treated surgically. Radium has approximately the same effect as X-rays, and is capable of application to small cavities and pockets of disease to which it was difficult to introduce, or confine, X-rays. To obtain the effect of the more powerful radium rays (gamma rays) alone, a shield of aluminum is interposed which allows the passage of these rays of radium alone.

Turning to electrotherapy, he dismisses the high frequency current with an enumeration of the diseases it is said to benefit. (Markedly beneficial results are obtained by this means in alopecia propria, accompanied by the inunction of an appropriate salve, or the application of a suitable wash, and it is also beneficial in pruritus and stubborn scaly itching patches of eczema, especially, in the latter case, if administered with the carbon pointed elecrotde.—Ed.) With respect to cataphoresis, Baum has demonstrated that ana- and cataphoresis are both possible and beneficial. From the anode, he forced into the skin corrosive sublimate, cocaine, lithium, methylene blue, quinine, and atropine, while from the cathode, salicylic chromic and acetic acid, ichthyol and arsenic. This method, if further experiments are successful, should be adapted to the treatment of sycosis and ringworm especially.

A comparison of the Finsen, Reyn and Lortet and Gounod lamps, shows, as regards relative expense of operation, that the Finsen lamp requires 80 amperes, the Reyn 20, and the Lortet and Gounod 5 to 15. The latter,

however, has very slight penetrating power, and its usefulness is consequently limited to superficial dermatoses. Kromarger claims, with his quartz lenses, to produce rays with thirty times more penetrating power than the Reyn lamp, while the superficial effect is so strong it must be tempered by methylene blue. Compared with X-rays the three lamps mentioned have greater bactericidal qualities, but the X-rays can penetrate deeper, and can be used effectively over far larger surfaces at one sitting.

Under the head of hydrotherapy is considered both treatment by baths and sunlight, and the "light cabinets" so-called. Some cases of generalized eczema and psoriasis, pemphigus, dermatitis herpetiformis, scleroderma, and dermatitis exfoliativa, have been benefited by the combined treatment of large doses of heat, light, and water, chiefly, White believes, by the stimulation to the general circulation.

In regard to organotherapy, most is as yet speculation, but we know that thyroid extract restores the dry, coarse hair, the wizened skin, and the brittle nails of myxedema to comparative health, while adrenalin injections contract the capillaries and are beneficial in erythema multiform, urticaria and purpura.

Under the heading "Congelation," the observation is made that the application of ethyl chloride in severe cases of herpes zoster, as first recommended by Morrow, affords marked relief. The spinal seat of the disease is frozen twice daily, accompanied by local chilling of the cutaneous lesions when necessary. Liquid air has been used successfully in the treatment of pigmented naevi, verrucae, etc., but is usually impossible to obtain. It is applied on a cotton stick. Carbon dioxide snow furnishes an excellent and easily obtained substitute for the last mentioned. Ten seconds medium pressure of liquid air induces solid freezing. The carbon dioxide snow should be applied from 5 to 45 seconds, depending on the tissue attacked. Tough, raised, hairy and pigmented moles will bear the longer applications, but the first treatment should be short and tentative.

The author's experience with the lately brought forward hyperaemic treatment, especially that of Bier, has not been especially satisfactory.

The final subject, that of serum therapy, has furnished some encouraging, almost brilliant results at times, and again, failures. The staphylococcus vaccine is of great value in the treatment of carbuncles, furuncles and coccygenic sycosis, often causing speedily improvement, and cure, in cases that have resisted other local and general measures. In the congestive stage of acne rosacea, as well as in acne vulgaris, marked successes, but also frequent failures, are recorded after injections of the staphylococcic epidermidis albus vaccine. Petit has used hot horse serum with unusual success in the management of burns.

Unfortunately, as regards cancer, nothing definite is yet attained, but the researches and experiments of Crile, Adamkiewics and others are encouraging. Antistreptococcic serum injections are helpful in erysipelas. (Injections of Vaughan's and McClintock's nuclein solution, 30 to 60 m., are also good. —Ed.) Deycke-Pasha and Resched-Bey have devised a fatty body which they call nastin, for which they claim considerable prophylatic powers against leprosy, and, when injected into fresh or early cases, amelioration of symptoms or even cures. Transfused normal blood has been successful in the treatment of purpura (Crile) and hemophilia (Mumford). The subcutaneous injection of 30 cc. of fresh rabbit serum is also recommended for purpura.

Coley's fluid continues to give striking results (and as striking failures.—Ed.) in the treatment of inoperable sarcoma and carcinoma. (It seems to act best in osteosarcoma.—Ed) Crile and Beebe have recently devised another method of treatment as follows: "By over-bleeding tumor dogs, and then over-transfusing from immune dogs, they have been able to cure nine out of ten of these animals, some of which were cachetic and showed metastases. These same authorities have repeated these experiments with six human patients. Their tumors were first excised and normal blood was transfused. These tumors were of the round or spindle cell varieties (the most malignant types), and after sixteen months the patients were alive, and apparently free from recurrence." Crile and Beebe hoped they might become a source of immune blood for the cure of others.

As regards syphilis, we have in the Wasserman reaction the means of finding out accurately the nature of evident and obscure cases, but has yet no curative serum has been brought forth. It, however, seems very probable that such an one will be shortly produced.

Finally, turning to tuberculosis, it is a pleasure to state that the successful cutaneous, subcutaneous, and ophthalmic use of tuberculin as a diagnostic agent is undeniable; but, unfortunately, here too, curative effects are as yet largely unobtained.

THE MEDICAL FORTNIGHTLY

A Cosmopolitan Biweekly for the General Practitioner

The Medical Fortnightly is devoted to the progress of the Practice and Science of Medicine and Surgery. Its aim is to present topics of interest and importance to physicians, and to this end, in addition to a well-selected corps of Department Editors, it has secured correspondents in the leading medical centers of Europe and America. Contributions of a scentific nature, and original in character, solicited. News of Societies, and of interesting medical topics, cordially invited.

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MEDICAL MISCELLANY

A RETRACTED vesical ureteral orifice indicates hypertrophy and ureteral contraction of the ureter with diminished ureteral lumen. —Byron Robinson.

LEA & FEBIGER have recently issued a portrait-list of new and standard medical works issued by them. It contains the photographs of the authors of practically all of their books, which adds much interest to the description of their various books.

MEDICAL CERTIFICATES NOT ACCEPTED.—It has recently been decided at the New York City Court of General Sessions that too many doctors have the habit of certifying to the inability of witnesses and defendants to appear in court, and that hereafter the doctor signing the certificate shall be required to come to court and to tell under oath the circumstances under which he made out the paper.

DR. ISADORE SCHNABEL, professor of ophthalmology and director of the First Ophthalmological Clinic of the University of Vienna, died suddenly, recently, aged 66. Professor Schnabel was a well-known teacher of ophthalmology, and was favorably known to American physicians studying in Vienna.

DR. DOUGLAS ARGYLL ROBERTSON, famed throughout the world on account of the pupillary phenomenon bearing his name, died recently at Gondal, India, aged 71. He was formerly lecturer on diseases of the eye at the University of Edinburgh and was an ex-president of the ophthalmological section of the British Medical Society. At the time of his death he was honorary surgeon-oculist to the king.

STATE BOARD MEETING.—The Missouri State Board of Health, at its annual meeting, held in Jefferson City, January 6, organized and elected the following officers: President, Dr. Robert H. J. Goodier, Hannibal; vice-president, Dr. John T. Thatcher, Oregon, and secretary, Dr. James A. B. Adcock, Warrensburg. Four new members will be appointed by Governor Hadley in the near future.

INSTRUCTION IN MEDICAL ETHICS.—The Vienna Aerztekammer (local medical council of Vienna) has presented to the minister of education a petition for the creation of a special chair for instruction in medical ethics and sociology, according to a plan embracing the following points: (1) the relation of the practitioner toward the general public, the local authorities, and the law, civil and criminal; (2) his duties toward the local medical organization; (3) the relations between the doctor and his patients, the duties and rights of the latter in these relations, and his duties toward his colleagues in private practice (medical ethics in the stricter sense); (4) the duties of the doctor in regard to contract, club and insurance practice; and (5) the notification of diseases (infections, industrial or occupational). Besides these social-medical subjects, social hygiene should be taught theoretically and practically. Physicians are not now, in Austria at least, in the front rank of those who are grappling with this problem; they must regain this position. The following subjects are recommended as appropriate for study: History of social hygisene, social statistics (morbidity and mortality of various classes, occupations, races, ages), and special hygiene (schools, buildings, food). If these studies were added to the curriculum of the medical student, the competence of the future physician would be increased and social progress advanced.

MURDEROUS jealousy at eighty-four is reported in the associated press from Viroqua, Wisconsin. Elond Olson there killed his wife, one year his junior, and then attempted suicide. The double tragedy took place in their home on a farm near a small village about six miles from Viroqua. The aged husband is not expected to live.

THE annual meeting of the stockholders of the Chicago Eye, Ear, Nose and Throat College was held recently. The old board of directors consisting of Drs. Wm. A. Fisher, A. G. Wippern, H. W. Woodruff, Thomas Faith and J. R. Hoffman were re-elected. The college is entering upon the thirteenth year of its existence and the reports of the officials show a very satisfactory condition of the college and hospital.

ITALIAN PHARMACY LAWS.—Italy has been so flooded of late with foreign-made specialties that the pharmacists of that country are becoming alarmed and have begun an agitation for a revision of the pharmacy laws. The memorial presented by them to the Italian Parliament asks that pharamcists only be permitted to deal in medicinal articles both at wholesale and retail; that doctors' dispensaries be abolished and parish pharmacies substituted for them, the parish pharamcists to be paid like the poor doctors. Limitations on the basis of population is demanded, one pharmacy to exist for every 4,000 in the country and one for every 5,000 inhabitants in the cities and larger towns. The manufacture of pharmaceutical specialties is to be allowed only upon special permission of the chief sanitary council.

THE DELGARGO MEMORIAL.—Charity Hospital and the City of New Orleans have recently dedicated the "Delgardo Memorial, which is a five-story surgical hospital, the surgical department of the Charity Hospital group. The erection of this building was made possible through the gift of $200,000 by Mr. Delagrdo in memory of deceased relatives, and was the result of kindly regard for his friend and physician, Dr. Rudolf Matas. The hospital is one of the most complete of its kind in America. The four lower floors are devoted to wards and rooms for patients, the fifth floor is divided into operating suites, there being several operating-rooms, which are complete in every detail. St. Louis needs a few Delgardos and a few Dr. Matases to locate them; our rich men are not much given to memorials, and when they do something of the kind it is usually so hedged about with restrictions that the profession and the public are tardily benefited.

ACHIEVEMENTS are unsatisfactory where simultaneous attempts are made to explain mental and physical energy.—B. Robinson.

IN medical onomatology, as in ordinary speech, want on incorrectness is an offense against both truth and good manners.—A. Rose.

NO BASEMENT BAKERIES.—The Chicago Health Department has begun active steps to enforce the ordinance governing bakeshops, and has served notice that bakeries must be removed from basements and from ill-ventilated rooms. Many of the largest hotels and restaurants in the city, more especially in the down town districts, have their bakeries situated in the basement or even the sub-basement, where they do not receive sufficient fresh air or sunlight.

CANCER PREVENTION.—Cancer is a communicable disease. This is a fact beyond a doubt. Therefore, every case carries with itself the necessity of isolation and the free use of proper disinfecting agents. Presumably all agents and hygienic measures generally that are known to fortify the patient against the inroads of any active disease, such as good food, air, light, graded exercise and mental calm, are operative against cancer. On the same plane, every condition known to reduce the natural immunity of the body to infection generally may be said to favor the implantation of cancer. Particularly do wounds of the skin or mucous membrane expose a person to the virus of cancer. Perhaps implantation is impossible, or at least only very remotely possible, on these surfaces apart from some structural lesion, such as a fissure or ulcer. —Medical Council.

DEATH OF PHYSICIANS IN 1908.—During 1908 the deaths of 2,261 physicians in the United States and Canada were noted in the Journal of the A. M. A., the equivalent of an annual death rate per thousand of 17.39, based on an estimate of 130,000 practitioners. This rate does not differ materially from those of the previous six years, which were, respectively: 1907, 16.1; 1906, 17.2; 1905, 16.36; 1904, 17.14; 1903, 12.73, and 1902, 14.74. The age at death varied from 21 to 102 years, the average being 59 years, 6 months and 5 days. The number of years of practice of the decedents varied from the first year of practice to the seventy-sixth, the average being 30 years and 5 months. About 14 per cent of those who died were members of the American Medical Association. Chief among the death causes were heart disease, violence, pneumonia and cerebral hemorrhage, in the order noted.

SOCIETY PROCEEDINGS

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

The twenty-first semi-annual meeting of this society will be held in St. Joseph, March 18 and 19, under the presidency of Dr. C. B. Hardin of Kansas City.

The program, which is now in press, is one of the best, from every standpoint, ever issued by this organization, and includes the following well-known names: Dr. Walter Wyman, Washington, D. C., surgeon-general Marine Hospital Service (address on Public Health); Dr. H. J. Boldt, New York (address in Surgery, "Cancer of the Uterus"); Dr. N. S. Davis, Jr., Chicago (address in Medicine); Drs. Leo M. Crafts, Francis Reder, D. H. Fairchild, E. H. Skinner, Alfred C. Croftan, Hugh T Patrick, Leon Straus, I. A. Abt, F. H. Clark, J. Block, C. O. Thienhaus, W. O. Henry, E. S. Pettyjohn, Cornelius Williams, J. W. Cokennower, C. M. Nicholson, J. L. Boehm, H. J. Scherck., Edw. G. Blair, Chas. D. Center, F. E. Coulter, E. H. Miller, Wm. M. Stevens, W. T. Elam, R. L. Sutton, A. W. McAlester, Jr., and others.

The sessions will be held in the banquet hall of the new Robidoux Hotel, which will be headquarters.

The local Arrangement Committee under the chairmanship of Dr. Jacob Geiger, extends a cordial welcome to the profession, and promises a social as well as a scientific treat for all who visit St. Joseph upon this occasion. The ladies are especially invited, and arrangements for their entertainment have been perfected.

Programs will be ready for distribution February 25th. Copies will be mailed by the secretary upon request.

Room reservations at Hotel Robidoux should be made at once, to secure satisfactory accommodations. Rates, $1.00 to $5.00, European plan.

EXCURSION TO SULPHUR SPRINGS.

Our society is in receipt of a cordial invitation to visit Sulphur Springs, Ark., where members will be the guests of the Benton County (Ark.) Medical Society, the Commercial Club and Mr. Kihlberg, who will open his new hotel with a banquet and ball in our honor. A special train will leave St. Joseph on Friday evening, March 19, arriving at the Springs early Saturday morning, where we will be entertained on Saturday, visiting the famous Spanish Treasure Cave, and other points of interest. Those who desire to do so, may return home at midnight, Saturday, while special terms will be made to any who remain over Sunday. Mr. Kihlberg also extends a cordial invitation to all physicians to visit his new bath house, which is one of the most complete and elaborate in the West. Special railroad rates will be made for the occasion by the K. C. Southern R. R. not to exceed $4.00 for the round trip (regular fare, $12). The secretary should be notified before the meeting by all who contemplate the trip, so that sufficient accommodations may be secured. Come, bring your wives, daughters, or sweethearts, enjoy a feast of reason, and intermingle with the good fellows of the Missouri Valley and their friends; when the scientific work is over, take a restful trip to the salubrious clime of old Arkansaw and renew your youth in the wonderful waters of Sulphur Springs, while making the acquaintance of some of the best fellows on earth—the fellows whose praises have been sung by poets, and whose virtues are extolled by artist's brush and facile pen, "The Arkansaw Doctors."

AMERICAN MEDICAL ASSOCIATION.

Members of the Medical Society of the Missouri Valley and the Medical Association of the Southwest, will be interested in plans that are maturing for a joint excursion train to Atlantic City in June, to attend the

annual meeting of the American Medical Association. The special train will start from St. Louis via the Big Four and C. & O. railway, stopping over at Hot Springs, Va., where the delegates will be entertained at luncheon at the famous "Homestead" hotel. Special rates will be in effect, including a boat trip to New York City, and returning either via Niagara Falls or Washington, D. C. By combining the forces of the two societies a special train will be secured, on which no one but doctors and their families will be permitted to ride, thus affording the maximum degree of pleasure and comfort. Members of other medical societies are cordially invited to join the party. Later announcements will be made in this journal.

American Party, Sixteenth International Medical Congress.—As a large number of American physicians will attend the Sixteenth International Medical Congress to be held in Budapesth, Hungary, August 29th to September 4th, 1909, the following itineraries have been arranged to enable the journey to be made with the maximum of comfort and enjoyment, at fixed inclusive fares: Tour A provides for a direct trip, with short trips to Paris, Berlin, Munich and Vienna, with carriage drives, visits to the hospitals, etc., in addition to the stay in Budapesth during the session of the Congress, with return to Berlin and Hamburg (41 days, $395, including hotel and all expenses). Sail from New York August 12, by North German Lloyd S. S. "Bremen." Tour B presents an opportunity of combining a visit to Great Britain, Paris and some of the points of scenic interest in Switzerland, with the opportunity of returning direct from Budapesth to New York (60 days, $540, all expenses). Sail from New York July 24th, by White Star liner "Arabic."

The business arrangements of the tour have been placed, as before, in the hands of Thos. Cook & Son, the well-known tourist agents, which insures perfect and complete service for the trip, and relieves passengers from all troublesome details incident to foreign travel. Those delegates who attended the last meetings in Madrid and Lisbon will remember the excellent service afforded them. Rooms have been specially reserved at Hotel Hungaria, Budapesth, for this party, but as the number is necessarily limited, we would advise those contemplating the trip, to book at once and secure accommodations. For further information and copy of itineraries, apply to Chas. Wood Fassett, M. D., Krug Park Place, St. Joseph, Mo.

Hot Springs, Ark., the American Carlsbad.—Visitors to this popular resort this season are amazed and pleased at the transformation that has taken place at the Park Hotel and Bath House. More than $100,000 has been expended in improvements, including an entirely new bath house and hydrotherapeutic equipment, which surpasses anything of the kind in this country. Physicians may now send their patients to Hot Springs in perfect confidence, feeling that they will receive scientific treatment in an establishment that is strictly high class, and surrounded by every comfort that the lavish expenditure of money can produce in a first-class hotel like the Park has always been. The bath house is in charge of an experienced hydrotherapeutist, Prof. Sureddin, who has had years of practice in some of the largest Spas of Europe. The Park bath house is entirely separate, and distinctly for guests of the house, so that one is not brought in contact with patients from the outside, a very valuable fact to remember when sending your well-to-do patients to Hot Springs. Mr. J. F. Hayes, the popular manager, will be glad to have physicians call when in the city, and inspect his bath establishment, and special courtesies will be extended the profession at all times, upon presentation of card. Write for illustrated booklet and circular, giving the Park method of handling the water, in which the radio-active gas is utilized in closed pipes, without losing any of its energy.